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ABSTRACT

This study attempts to determine whether the Piers-Harris Self-Concept Scale is appropriate for use with varying population types, and whether the dimensions identified by it are sufficiently consistent across samples to allow some clarification of the nature of self-concept in children. (AE)

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Measuring the Self-concept: A Factor Analytic Study¹

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Self-concept measures have been criticized on the grounds that the self-concept is too elusive a construct to be susceptible to reliable measurement (Wylie, 1961), that the self-report scales and techniques required are themselves too susceptible to unreliability (Gill & D'Oyley, 1968; Stanley, 1964; Wylie, 1961), and also that the multidimensional nature of self-concept, however it is defined by a given researcher, precludes generalizability from scale to scale (Crowne & Stephens, 1961). Crowne, Stephens, & Kelly (1961), in comparing several self-concept measures, found few correlations of sufficient magnitude to inspire confidence in any of them. Self-concept measures, it would seem, actually measure a multitude of personality dimensions and proceed from varying definitions of the construct, so that an evaluation of the self-concept of any individual is useless without knowledge of the instrument used for the measurement and the definition of self-concept from which that instrument was derived.

The Piers-Harris Self-Concept Scale (Piers & Harris, 1964) was designed specifically to meet some of the objections listed above. It is a multi-dimensional self-concept instrument, usable with children over

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a wide age range. It has possibilities of standardization, so that self-concept data may become more comparable than heretofore. The method of development of the scale has been detailed in a professional journal (Piers & Harris, 1964). While the instrument itself was developed with samples of third, fourth, sixth, and tenth grade children, factor analysis was carried out only with the sixth grade sample ($N = 457$). Internal consistency indices (KR_{21}), computed by grade (third, sixth, and tenth), ranged from .88 to .93, except for tenth grade girls ($KR_{21} = .78$). Retest reliability coefficients (four month interval) were in the .70s for all three grades. Validation was established by testing a group of 88 institutionalized retarded females; the means found for this group were, as expected, significantly lower than for the public school children tested.

The Piers-Harris Scale consists of 80 statements to each of which testees respond 'Yes' or 'No' in terms of its appropriateness as applied to themselves. The items were developed from Jersild's (1952) study of things persons say they like and dislike about themselves. About half of the items are negative in content (though not in syntax) in order to reduce effects of acquiescence. The instrument is suitable for group administration, either with students reading the statements silently, or with the administrator reading them aloud, while students (in both cases) circle the appropriate response on the test booklet.

The present study was designed to determine whether the Piers-Harris Scale is an appropriate one to use for varying population types, and whether the dimensions identified by it are sufficiently consistent across samples to allow some clarification of the nature of self-concept in children.

Piers-Harris Self-Concept Scale (SC) results were secured from three groups of Indiana children: one group of rural third and fifth graders (N=90), and two groups of urban children (fourth grade, N =129; third through sixth grade, N =375). Slightly more than half of the urban fourth grade sample are also represented in the fifth grade of the other urban sample, which was tested one year later. Factor analyses were carried out for each of the samples separately¹. In order to provide reasonable comparisons with the existing Piers-Harris data (1964), ten factors were rotated out. Items on each factor loading at or above $/.300/$ were identified and ranked in order of absolute magnitude of loading; then each factor of each sample was compared with all factors of the other two samples in order to find item clusters common to all three samples. It was arbitrarily established that only those item clusters would be examined for which the proportion of common items to total items in any one factor being compared was $.333$ or greater.

These comparisons resulted in the definition of ten clusters, ranging in size from two to ten items, which were found in at least one factor from each of the three samples. For example, items 34, 25, 80, 22, 79, and six others appeared together in at least one factor from each of the three samples. In this instance the total items per factor for the three samples were 24 (urban third - through sixth-grade), 23 (urban fourth grade), and 23 (rural third and fifth grades). The proportions of

1. It may be objected that factor analysis of an 80-item scale for a sample of only 90 grossly violates the conventionally required ratios (Guertin & Bailey, 1970; Horst, 1965; Nunnally, 1967; but see Cattell, 1966). While the ratio of 1.1:1 would not necessarily be expected to yield a reliable analysis of factor structure for any single sample, neither would it be expected that the results of such analyses would be comparable to the results of analyses of other samples. Violation of the

common items to total items per factor were thus .458, .478, and .478 respectively. Since the proportion for at least one factor exceeded .333, this cluster of items was retained for further comparisons. All such clusters were then compared with the item-clusters found in the ten factors reported by Piers & Harris' (1964) mimeographed report, from a sample of 457 urban Iowa sixth graders. After this additional comparison, eight item clusters remained, of which six were clearly interpretable. Complete listings of the clusters appear in the Appendix; the following list shows a few representative items from each of the six interpretable clusters:

1. Behavior (10 items): I often get into trouble; I behave badly at home; I am a good person.
2. Anxiety (5 items): I worry a lot; I am often afraid; I get nervous when the teacher calls on me.
3. Intellectual and School Status (5 items): I am good in my schoolwork; I am smart; I am a good reader.
4. Appearance (4 items): I am goodlooking; I have nice hair.
5. Happiness (3 items): I am a happy person; I am cheerful.
6. Satisfaction (3 items): I like being the way I am; I wish I were different.

conventional ratio seems thus in this instance to be the more conservative approach. This reasoning, however, was not responsible for the selection of small samples. The samples were selected irrespective of size because they were available, and larger samples were not.

Clusters 5 and 6 provide an interesting result in that they represent separate factors on the three Indiana samples but are found together in the Piers-Harris Iowa sample, where the Factor (X) is labelled, appropriately, "Happiness and Satisfaction."

Several conclusions may be drawn from the findings. First, the appearance of identical item-clusters in factors of four somewhat different samples suggests that self-concept is a relatively stable dimension of personality even though it is itself a composite of several categories of self-evaluation. The construct is therefore apparently useful and admits to consistent measurement. The composite categories, despite their measurement with self-report scales administered to children, maintain a clear identity.

Second, it may be concluded that the Piers-Harris Self-Concept Scale is an appropriate and reliable instrument for the measurement of self-concept in elementary-aged children at least as early as the third grade, and for children representing somewhat different populations in terms of geographical location and urban or rural setting.

The need for more investigation is certainly indicated. Such further studies would encompass larger samples which vary on important dimensions such as race and socioeconomic status; with large enough samples, sex differences could be examined with some confidence.

If it can be clearly demonstrated, and not merely conjectured, that children of varying origins and life situations are similar in this very individual dimension of personality, perhaps the understanding of child

development will be enhanced. If, moreover, the Piers-Harris or a similar scale proves to be consistently reliable across a wide variety of ages and populations, the investigation of self-concept will surely be facilitated. Extensive work on one scale may perhaps eventually provide a criterion measure which can then be used in developing scales for the measurement of self-concept in different formats. The establishment of such a scale might well perform for this aspect of personality measurement the same kind of service provided for years by the Stanford-Binet I.Q. scales in the measurement of mental ability.

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COMMON ITEM CLUSTERS FOUND IN FOUR FACTOR ANALYSES
OF THE PIERS-HARRIS SELF-CONCEPT SCALE

Sample A ¹ Factor 1	Sample B Factor 2	Sample C Factor 2	Sample PH Factor 2	Item No.	Statement
Rank	Rank	Rank	Rank		
1	6	5	4	34	I am often in trouble.
2	22	9	3	25	I behave badly at home.
4	4	14	8	80	I am a good person.
7	5	1	1	22	I do many bad things.
9	3	4	7	79	I can be trusted.
10	17	3	10	48	I am often mean to other people.
11	7	7	14	67	I am easy to get along with.
16	8	13	12	56	I get into a lot of fights.
19	23	17	15	13	It is usually my fault when something goes wrong.
23	2	22	9	12	I am well behaved in school.
24	23	23	18	Total items in each factor.	
14.58	.478	.478	.556	Proportion of common items to total items/factor	

(Behavior)

- ¹Sample A: urban Indiana, third through sixth grade, N = 375
 B: urban Indiana, fourth grade, N = 129
 C: rural Indiana, third through fifth grades, N = 90
 PH: urban Iowa, sixth grade, N = 457

²Loadings are rounded to two significant digits, and decimal point is omitted.

Appendix

Sample A		Sample B		Sample C		Sample PH		Item	Statement
Factor 1		Factor 1		Factor 4		Factor 3		No.	
Rank	Load	Rank	Load	Rank	Load	Rank	Load		
1	-63	1	-75	3	-38	2	-57	37	I worry a lot.
2	-57	2	-64	11	-33	5	-49	28	I am nervous.
4	-50	9	-37	2	-59	3	-55	74	I am often afraid.
5	-50	3	-56	9	-37	4	-54	7	I am nervous when the teacher calls on me.
6	-46	5	-46	12	-33	6	-49	10	I get worried when we have tests in school.
$\overline{14}$		$\overline{14}$		$\overline{15}$		$\overline{12}$		Total items in factor.	
.357		.357		.333		.417		Proportion of common to total items/factor.	
(Anxiety)									
Sample A		Sample B		Sample C		Sample PH		Item	Statement
Factor 9		Factor 2		Factor 9		Factor 1		No.	
Rank	Load	Rank	Load	Rank	Load	Rank	Load		
1	-62	1	-73	1	-67	1	-66	21	I am good in my schoolwork.
3	-51	2	-69	3	-51	17	-30	12	I am well behaved in school.
4	-47	19	-32	4	-50	2	-63	5	I am smart.
5	-45	10	-46	8	-32	4	-55	70	I am a good reader.
7	43	12	40	2	60	5	51	26	I am slow in finishing my schoolwork.
$\overline{12}$		$\overline{23}$		$\overline{9}$		$\overline{13}$		Total items in each factor.	
.417		.217		.556		.278		Proportion of common to total items/factor.	

(Intellectual and School Status)

Sample A Factor 6		Sample B Factor 8		Sample C Factor 3		Sample PH Factor 6		Item No.	Statement
Rank	Load	Rank	Load	Rank	Load	Rank	Load		
1	-75	10	-30	2	76	1	-74	54	I am goodlooking.
2	-67	2	-56	3	70	3	-60	41	I have nice hair.
3	-60	3	-51	5	68	5	-52	29	I have pretty eyes.
4	51	5	39	4	-69	4	56	73	I have a bad figure.
18	10	21	12	21		12		Total items in each factor.	
18		10						p of common to total items/ factor.	
		.400		.190		.333			

(Appearance)

Sample A Factor 4	Sample B Factor 9	Sample C Factor 7	Sample PH Factor 10	Item No.	Statement
Rank	Rank	Rank	Rank		
Load	Load	Load	Load		
1	1	2	5	52	I am cheerful.
2	3	7	2	50	I am unhappy
4	4	6	1	2	I am a happy person.
-67	75	68	42		
-65	-61	-40	-62		
-55	44	42	65		
<u>9</u>	<u>13</u>	<u>11</u>	<u>9</u>		
					Total items in each factor.
.333	.231	.273	.333		p of common to total items/ factor.

Sample A Factor 10		Sample B Factor 7		Sample C Factor 6		Sample PH Factor 10		Item No.	Statement
Rank	Load	Rank	Load	Rank	Load	Rank	Load		
1	-56	2	54	7	-35	3	60	18	I like being the way I am.
2	54	4	-50	1	70	7	-35	8	My looks bother me.
3	52	3	-50	4	40	4	-57	60	I wish I were different.
<u>4</u>		<u>18</u>		<u>8</u>		<u>9</u>			Total items in each factor.
.750		.167		.375		.333			p of common to total items/factor.
(Satisfaction)									
Sample A Factor 3		Sample B Factor 7		Sample C Factor 8		Sample PH Factor 9		Item No.	Statement
Rank	Load	Rank	Load	Rank	Load	Rank	Load		
12	-47	9	-39	4	38	3	-47	68	I lose my temper easily.
13	-45	13	-38	3	39	4	-40	39	I usually want my own way.
<u>24</u>		<u>18</u>		<u>6</u>		<u>6</u>			Total items in each factor.
.083		.111		.333		.333			p of common to total items per factor.
Sample A Factor 8		Sample B Factor 10		Sample C Factor 3		Sample PH Factor 6		Item no.	Statement
Rank	Load	Rank	Load	Rank	Load	Rank	Load		
1	-50	6	30	21	31	6	-41	15	I am strong.
5	-37	5	34	6	63	11	-32	55	I have lots of pep.
<u>6</u>		<u>6</u>		<u>21</u>		<u>12</u>			Total items in each factor.
.333		.333		.096		.167			p of common to total items/factor.